

CLASS 9 MATHS – CHAPTER 12

STATISTICS – ALL DEFINITIONS

Basic Terms

Statistics: Collection, presentation, analysis and interpretation of numerical data.

Data: Facts or figures collected for some purpose.

Observation: Each numerical entry in the data.

Frequency: Number of times a particular observation occurs.

Range of Data

Formula

$$\text{Range} =$$

Purpose of Range

- It shows how widely the data is spread.
- Larger range \rightarrow data is more scattered.
- Smaller range \rightarrow data values are close to each other

Class Interval

Data is arranged in groups like:

10–20, 20–30, 30–40 ...

Class Size

Class S

Example:

Class 40–50 \rightarrow Class size = 50 – 40 = 10

Class Mark (Mid Value)

Formula

$$\text{Class M} = \frac{\text{Upper Limit} + \text{Lower Limit}}{2}$$

Why Class Mark is Used?

- It represents the whole class by a single value.
- Helps in plotting frequency polygon.

Types of Frequency Distribution

(a) Ungrouped Frequency Distribution

Direct counting of each individual value.

(b) Grouped Frequency Distribution

Data arranged in class intervals with corresponding frequencies.

Graphical Representation of Data

(i) Bar Graph

- Bars of equal width
- Gap between bars

(ii) Histogram

- Bars are **continuous (no gaps)**
- Used for grouped data

(iii) Frequency Polygon

- Mid-points of histogram bars joined by straight lines.